

## Worksheet: Charging by Friction

Use text p.274-275 to complete the following.

In a \_\_\_\_\_ object, the number of positive and negative charges are \_\_\_\_\_ and are \_\_\_\_\_ distributed.

\_\_\_\_\_ (a rubbing action) transfers electric charges from one object to another. This results in \_\_\_\_\_ amounts and an uneven distribution of \_\_\_\_\_. The substance with a \_\_\_\_\_ hold on its electrons will pull electrons away from the substance with a \_\_\_\_\_ hold on its electrons.

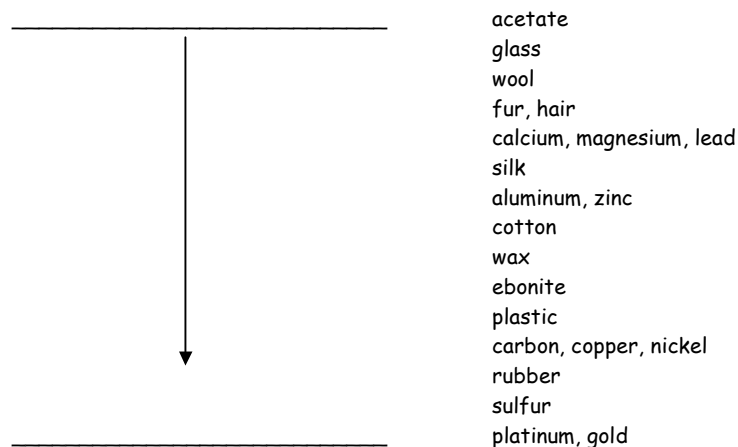
When a plastic comb is rubbed against hair, it pulls electrons away from the hair, since it has a \_\_\_\_\_ hold on its electrons. Thus the comb becomes \_\_\_\_\_ charged, and the hair \_\_\_\_\_ charged.

Copy Figure 1 (a) and (b).

Other examples of friction include a charge building up on:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Whether a substance will \_\_\_\_\_ or \_\_\_\_\_ electrons due to friction can be determined using a list called the **Electrostatic Series**.



When charging two substances by friction:

- the substance \_\_\_\_\_ on the list **loses** electrons and becomes \_\_\_\_\_ charged
- the substance \_\_\_\_\_ on the list **gains** electrons and becomes \_\_\_\_\_ charged

	Positive	Negative
A cotton shirt is tumble dried with a wool sweater.		
A rubber pipe is rubbed against a gold plate.		
A silk tea towel is used to shine a glass plate.		